



National Biosolids Partnership
Environmental Management System (EMS)
Internal Audit Report
City of Fort Worth Water Department
Village Creek Water Reclamation Facility
Fort Worth, Texas

Audit Performed By:
Steven L. Nutter
Audit Dates: August 29th, 2014
Report Date: September 15th, 2014



References

City of Fort Worth EMS for Biosolids
NBP - 3rd Party Auditor Guidance (August 2011)
NBP – Guidance for Interim Audits (August 2004)

1.0 - INTRODUCTION

The Fort Worth Water Department, in conjunction with Renda Environmental Inc., has developed and implemented an environmental management system (EMS) for its Biosolids Program. The EMS helps the Village Creek Water Reclamation Facility to manage all aspects of its Biosolids Program, including solids treatment, dewatering, transporting, and beneficial land application. The EMS was originally certified on July 20, 2005 by the National Biosolids Partnership (NBP). The Fort Worth Biosolids Program was one of the original programs to volunteer to become a NBP Demonstration Agency, becoming the seventh agency in the country and the first in Texas to receive a NBP EMS certification.

A properly implemented EMS assists the Biosolids Program with the following:

- Identifying the overall goals and objectives of the Biosolids Program.
- Creating a series of management practices to meet the goals and objectives.
- Managing biosolids and monitoring and measuring the effectiveness of the program.
- Taking corrective and preventative measures if the management practices are not operating correctly.
- Conducting audits of the Biosolids EMS Program.
- Requiring management involvement to make changes to the program as needed.

The City of Fort Worth conducts internal audits of its Biosolids EMS Program. The internal audits are structured to work in tandem with third party interim and verification audits. The City believes that the internal audits provide opportunities to continually improve the EMS program and prepare staff for third party audits.

In accordance with Element 16 of the Biosolids EMS Program, an internal audit was conducted on August 29th, 2014. The audit team consisted of the following individuals from the Fort Worth Water Department:

- Steven L. Nutter, REM, CEA (Lead Auditor) - Over 14 years of experience conducting environmental audits & inspections with the City of Fort Worth Water Department and the Texas Commission on Environmental Quality (TCEQ).

2.0 - SCOPE AND OBJECTIVES

EMS Element 16 details procedures for conducting internal audits of the Fort Worth Biosolids Program. There are two types of internal audits:

- Interim Audits – During any given reporting year if a third party auditor is not utilized then the City shall conduct interim audits that cover the biosolids EMS management activities performed by the Contractor and the City. Interim audits are similar in scope and procedure to the National Biosolids Partnership (NBP) interim third party audits.
- Pre-Interim Audits - The City conducts pre-interim audits prior to third party audits. Pre-interim audits are more general in nature and focus on items such as environmental performance and goals & objectives.

This year the internal audit scope was designed to follow the pre-interim audit procedures. This included the review of the following items:

- Overall Environmental Performance
- Compliance Status
- EMS Goals & Objectives
- EMS Management Review Meetings
- Annual EMS Performance Report

In addition to the required items the pre-interim audit also evaluated the corrective action notices for 2013-2014.

The objective of the audit was to determine whether or not the EMS is effective in helping the Water Department to manage its biosolids program, as well as helping the biosolids program prepare for the third party interim audit.

3.0 - METHODOLOGY

The audit followed the guidelines provided in EMS Element 16 of the Fort Worth Biosolids Program. Each of the required components was reviewed to determine overall program effectiveness. Specifically the program was evaluated using the following methods:

- Document Review
- Interviews with City and Contractor Personnel

4.0 - OVERALL EVALUTION

Based on the pre-interim audit results the EMS continues to be an effective tool for assisting with the implementation and improvement of the biosolids program. Village Creek and the Contractor are currently facing a number of challenges due to the fact that solids characteristics have fundamentally changed over the last few years as well as ongoing changes in the regulatory environment. The EMS has been a critical component in helping the City and the Contractor respond to these challenges. However there are opportunities for improvement that both the City and Contractor have acknowledged and are committed to addressing. This is further testimony to the continual improvement philosophy of Fort Worth's Biosolids EMS Program.

5.0 - AUDIT PARTICIPANTS

The following City employees and Contractor personnel were contacted during the course of the audit:

Ben Davis, Biosolids Manager (Contractor) – (817) 571-9391
Magan Lersch, Biosolids EMS Coordinator (817)392-4979

6.0 - PRE-INTERIM AUDIT FINDINGS

The following summary addresses positive observations, nonconformances and recommendations noted by the auditor during the pre-interim audit.

6.1 - Positive Observations:

The Biosolids EMS Program continues to mature with improvement throughout the biosolids value chain. City and Contractor personnel are well trained and understand their roles and responsibilities. City and Contractor personnel continue to utilize corrective action notices and goals and objectives to address program deficiencies and promote overall program improvement.

6.2 - Minor Program Nonconformances

Element 10 – Operational Control

Item 10.1: Develop and implement standard operating procedures, work management practices or other appropriate methods at all critical control points throughout the biosolids value chain to effectively manage potential environmental impacts.

Finding: Both EMS Element 9 and the “Land Application Site Visit” SOP state that when a complaint is forwarded to the City a “Biosolids Complaint Form” shall be filled out. A review of the complaint log shows that the City has been diligent in

documenting complaints, but it has not always utilized the “Biosolids Complaint Form” as required.

Element 12 – EMS Documentation and Document Control

Item 12.2(c): Establish and maintain document control procedures and practices to ensure that the EMS program documentation and documents are kept up to date through periodic reviews and revisions (if applicable).

Finding: The procedure in EMS Element 14 states that “During each internal audit... the auditors shall evaluate all CANs to ensure that each has been closed and the proposed solution has effectively resolved the issue.” However, the pre-interim audit criteria in Element 16 do not require that CANs be evaluated during the internal audits. The pre-interim audit criteria in Element 16 need to be updated to correspond with the language in Element 14.

6.3 - Recommendations

1. Several new processes at Village Creek, including a new grit removal system, will become operational in the near future. It is recommended that the table of critical control points be updated as appropriate to reflect these changes once they become effective.
2. It is recommended that a review be performed to verify that all EMS Elements properly reference any applicable SOPs.
3. It is recommended the CAN # 2012-05 and CAN # 2013-13 be consolidated as they both deal with the same issue (SOP development for Village Creek).

7.0 – PRE-INTERIM AUDIT REQUIRED ELEMENTS

7.1 - Environmental Performance

Required TPDES Monitoring. During the 2013-2014 reporting period the Fort Worth Biosolids Program was 100% compliant with TPDES monitoring requirements:

- Fecal
- Helminth Ova
- Enteric Virus
- Metals
- Toxicity Characteristic Leaching Procedure (TCLP)
- Polychlorinated Biphenyl (PCB)

Odors. Odors were a big issue during the 2013-2014 reporting year. During this timeframe 35 odor complaints were forwarded to the Water Department. In response to ongoing odor issues the following actions were taken:

- Routine inspections and odor monitoring were performed at land application sites to verify complaint information and to make informed decisions on how to address the odor issues.
- Several goals & objectives were created to better understand the root cause of the odor problems as well as to help develop potential solutions for the future. See the EMS Annual Performance Reports for 2012-2013 and 2013-2014 for a complete listing.

Tracking Onto Roadways. During the 2013-2014 reporting period there were 10 tracking complaints forwarded to the City. The following actions were taken in response to problems associated with tracking of biosolids onto roadways:

- Inspections were performed at land application sites to verify complaint information and to make informed decisions on how to deal with tracking issues.
- A corrective action notice was initiated to reduce/eliminate biosolids falling onto roadways during transport
- For those instances when a tracking complaint was verified the Contractor promptly dispatched a crew to clean the roadways.

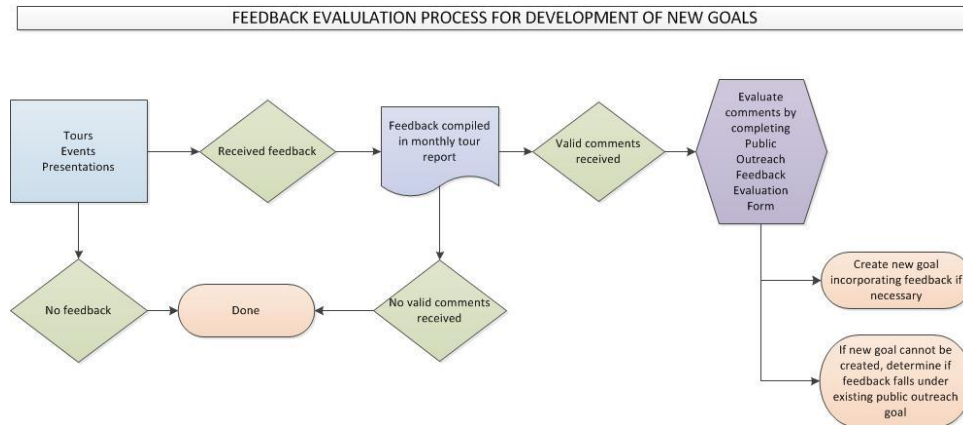
Storm Water Runoff. During the 2013-2014 reporting period there was one runoff complaint forwarded to the City. The City inspector was unable to verify the complaint due to the fact that it was forwarded to the City approximately 4 months after it occurred. During other routine inspections of land application sites the City inspector did not encounter instances of runoff from storm water events.

7.2 – Compliance Status

TCEQ issued an administrative order (AO) on May 13, 2013 in response to odors associated with biosolids land application activities. While the AO remains under review the City has initiated a number of projects to identify the root cause of the odors and to find solutions to reduce or eliminate future reoccurrences. See the EMS Annual Performance Reports for 2012-2013 and 2013-2014 for a complete list of Goals & Objectives. Currently there are no other open enforcement actions.

7.3 – EMS Goals & Objectives

EMS Goals & Objectives have been developed and updated as required by Element 5. See the EMS Annual Performance Reports for 2012-2013 and 2013-2014 for a complete list of Goals & Objectives. In response to the interim EMS audit conducted in October 2013 the City modified Element 5 to include more specific criteria for utilizing public input in the development of goals and objectives. A flow chart was developed to assist with the evaluation of public input.



7.4 – EMS Management Review Meeting

The Annual EMS Management Review Meeting was held on October 14th, 2013. The meeting minutes were documented and followed the criteria outlined in Element 17

1. Accomplishments since last review;
2. Changes to policy;
3. Goals & Objectives - Advancements towards existing goals and objectives and identifying “New” goals and objectives.
4. Internal EMS audit results;
5. External third-party Interim & verification EMS audits;
6. Legal and self-imposed regulation compliance;
7. Reports on emergencies, spills or other incidents
8. Corrective Action Notices;
9. Update to Critical Control Points;
10. Changing circumstances;
11. External communication and public participation;
12. Other biosolids performance measures;
13. New scientific/technical data on biosolids;
14. Review status of operational control procedures (SOPs)

7.5 – Annual EMS Performance Report

The Annual EMS Performance Report for the 2013-2014 reporting period was completed as required by EMS Element 15. A copy of the report can be found on the City's website.

7.6 – Corrective Action Notices

There were 15 corrective action notices (CANs) created during the 2013-2014 reporting period. However, at the time of the pre-interim audit CAN # 2012-05 was still open pending completion of plant SOP's. This conflicted with CAN # 2013-13 which was also created to address the same issue. This report recommends that these two CANs be consolidated to avoid confusion. Please see the EMS Annual Performance Reports for 2012-2013 and 2013-2014 for a complete listing of all CANs.